

The NIOSH Fire Fighter Fatality Investigation and Prevention Program

The United States currently depends on approximately 1.2 million fire fighters to protect its citizens and property from losses caused by fire. Of these fire fighters, approximately 210,000 are career/paid and approximately 1 million are volunteers. The National Fire Protection Association (NFPA) and the U.S. Fire Administration estimate that on average, 105 fire fighters die in the line-of-duty each year.

In fiscal year 1998, Congress recognized the need for further efforts to address the continuing national problem of occupational fire fighter fatalities and funded NIOSH to conduct independent investigations of fire fighter line-of-duty deaths.



Fire Fighter Fatality Investigations

The NIOSH Fire Fighter Fatality Investigation and Prevention Program conducts investigations of fire fighter line-of-duty deaths to formulate recommendations for preventing future deaths and injuries. The program does not seek to determine fault or place blame on fire departments or individual fire fighters, but to learn from these tragic events and prevent future similar events.

Program Goals

- Better define the magnitude and characteristics of line-of-duty deaths among fire fighters
- Develop recommendations for the prevention of deaths and injuries
- Disseminate prevention strategies to the fire service.

Traumatic Injury Deaths

The program uses the Fatality Assessment and Control Evaluation (FACE) model to conduct investigations of fireground and non-fireground fatal injuries resulting from a variety of circumstances, such as motor vehicle incidents, burns, falls, diving incidents and electrocutions. NIOSH staff also conduct investigations of selected non-fatal injury events. Each investigation results in a report summarizing the incident, and includes recommendations for preventing future similar events.

NIOSH staff with respirator expertise also assist with investigations in which the function of respiratory protective equipment may have been a factor in the incident. They evaluate the performance of the self-contained breathing apparatus (SCBA) as a system and conduct evaluations of SCBA maintenance programs upon request.



Cardiovascular Disease (CVD) Deaths

NFPA data show that heart attacks are the most common type of line-of-duty deaths for fire fighters. NIOSH investigations of these fatalities include assessing the contribution of personal and workplace factors. Personal factors include identifying individual risk factors for coronary artery disease. The workplace evaluation includes the following assessments:

- Estimating the immediate physical demands placed upon the fire fighter
- Estimating the fire fighter's acute exposure to hazardous chemicals
- Assessing efforts by the fire department to screen for coronary artery disease risk factors
- Assessing efforts by the fire department to develop fitness and wellness programs.



Database

Another component of the program is the research database, containing information for each injury incident. The database serves as a valuable tool to identify trends and analyze risk factors in line-of-duty injury deaths. Used in conjunction with individual incident reports, the database provides valuable information for developing broad-based recommendations for fire fighter injury prevention programs.



Information Dissemination

The Fire Fighter Fatality Investigation and Prevention Program disseminates the investigative reports and other related publications to stakeholders who can take action to help prevent fire fighter line-of-duty deaths and injuries. These stakeholders include fire departments, fire fighters, program planners and researchers.



What to Expect During a NIOSH Investigation

NIOSH is notified of a line-of-duty death in a number of ways, including notification by the United States Fire Administration (USFA), a fire department representative, the International Association of Fire Fighters (IAFF), or the State Fire Marshal's Office. NIOSH conducts investigations of both career and volunteer fire fighter line-of-duty deaths.

Once notified of a fatal injury, a NIOSH representative will contact the fire department. NIOSH investigators will review all applicable documents (e.g., department standard operating procedures, dispatch records, the victim's training records, coroner/medical examiner's reports, death certificates, blueprints of the structure, police reports, photographs, and video). Additionally, investigators will interview fire department personnel and fire fighters who were on the scene at the time of the incident. NIOSH may work closely with other investigating agencies. When needed, NIOSH will enlist the assistance of other experts, such as experts in motor vehicle incident reconstruction or fire growth modeling.

Once the investigation is completed, NIOSH will summarize the sequence of events related to the incident and prepare a draft report. Each department and union representative (if applicable) will have the opportunity to review this portion of the report in draft form to ensure it is technically accurate. The report is then finalized with the addition of recommendations for preventing future deaths and injuries under similar circumstances. Once the fire department and union have received the final copy of the NIOSH incident report, it is made available to the public by posting the report on the NIOSH Web site.

Other Publications and Products

In addition to the incident reports developed by the program, NIOSH has produced other products related to fire fighter safety and health:

- CD-Rom - Fire Fighter Fatality/Injury Reports and Other Related Publications. DHHS (NIOSH) Publication No. 2002-136
- Fire Fighters Exposed to Electrical Hazards During Wildland Fire Operations. NIOSH Hazard ID 15, DHHS (NIOSH) Publication No. 2002-112
- Fire Fighter Deaths from Tanker Truck Rollovers. NIOSH Hazard ID 14, DHHS (NIOSH) Publication No. 2002-111
- Interim Recommendations for Firefighters and Other First Responders for the Selection and Use of Protective Clothing and Respirators. DHHS (NIOSH) Publication No. 2002-109
- Traffic Hazards to Fire Fighters While Working Along Roadways. NIOSH Hazard ID 12, DHHS (NIOSH) Publication No. 2001-143
- Preventing Injuries and Deaths of Fire Fighters Due to Structural Collapse. NIOSH Alert, DHHS (NIOSH) Publication No. 99-146
- Fire Fighting Hazards During Propane Tank Fires. NIOSH Hazard ID 7, DHHS (NIOSH) Publication No. 99-129
- Explosions and Fires in Aluminum Oxygen Regulators. Food and Drug Administration/ NIOSH Public Health Advisory, February 1999. Available through: www.fda.gov/cdrh/safety.html.

These publications can be obtained by visiting the NIOSH Fire Fighter Fatality Investigation and Prevention Program Web site at www.cdc.gov/niosh/firehome.html or by calling (800) 356-4674 or (800) 35-NIOSH.

Who Do I Contact for Further Information?

If you have any questions regarding the NIOSH Fire Fighter Fatality Investigation and Prevention Program, please contact the NIOSH Division of Safety Research at:

National Institute for Occupational Safety and Health
Division of Safety Research
Surveillance and Field Investigations Branch
1095 Willowdale Road, M/S H-1808
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You may access the incident reports and other related fire fighter publications through the Fire Fighter Fatality Investigation and Prevention Program Web site:

<http://www.cdc.gov/niosh/firehome.html>

Visit the NIOSH Web site at:
<http://www.cdc.gov/niosh>

Copies of other NIOSH documents on occupational safety and health are available from:

National Institute for Occupational Safety and Health
Education and Information Division (EID)
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Cincinnati, OH 45226-1998
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